WEATHER FORECASTS AND WARNINGS.

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NORTHERN HEMISPHERE PRESSURE DISTRIBUTION.

Pressure was moderately high over Alaska from the 5th to the 8th, inclusive, and generally low during the remainder of the month, but with some recovery to normal conditions from the 17th to the 20th, inclusive, and during the last few days of the month. The most pronounced depression occurred from the 9th to 17th, inclusive, when the barometer readings were at times from 0.50 to 0.60 inch below the monthly normals. A second decided depression that began four or five days later was most marked over the extreme southern Alaska, with a low reading of 29.04 inches at Sitka on the 23d. Over the Pacific Ocean pressure was generally high, except during the first week of the month and for a few days about the middle of the month. There was, however, a severe storm over the Aleutian Islands on the 5th and another on the 26th and 27th. Brief press reports stated that a destructive typhoon swept over the Philippine Islands on the 16th, causing the loss of about 400 native lives and property valued at millions of dollars. The lowest barometer reading reported at Manila was 29.72 inches on the 17th. Over eastern Asia between the 1st and the 17th there were two periods of moderately low pressure separated by a high period of about equal duration, but after the 17th moderately high pressure ruled with a fall to normal conditions by the end of the month. Over western Asia and Europe pressure was generally high during the first two-thirds of the month and quite low thereafter except over Iceland where marked low pressure prevailed as a rule from the 5th to the 20th, inclusive, with equally marked high pressure at the beginning and end of the month and on the 26th. Over the middle and south Atlantic Ocean pressure was somewhat above the normal, except over the Azores, where low pressure ruled after the 25th.

WEATHER.

On September 27 a moderate depression (Brownsville 29.92 inches) appeared at the mouth of the Rio Grande. It moved slowly across the Gulf of Mexico in an east-northeast direction without any material increase in intensity, and crossed the Florida Peninsula on October 4. Then followed a sharp turn to the north-northeastward with the rapidly increasing intensity attendant upon a change in direction to the northward, and on the evening of October 6 the storm was central about 350 miles east of Charleston, S. C., a vessel observation in that locality showing a barometer reading of 29.42 inches. Heavy rains and winds of hurricane force attended the storm which continued north-northeastward with slowly decreasing intensity until October 9 when it was lost somewhere between the North Carolina coast and the island of Bermuda. The first advisory warnings for this storm were issued during the afternoon of October 4, and on the following day storm warnings were ordered from Norfolk, Va., to Hatteras, N. C. These were continued on the following day and extended southward to Savannah. After crossing Florida this storm was followed by radiotelegraph reports alone. Without them, knowledge of the progress of the storm would have been impossible, and no warnings would have been issued. The great value of the radiotelegraph service of the Weather Bureau has again been demonstrated and its permanency as an important feature of the forecast work is assured.

On the morning of the 5th radiotelegraphic reports indicated the presence of a disturbance off the Colombian coast, at about latitude 10 North and longitude 76 West. A week later it was off the eastern coast of Yucatan, with reported barometer readings of 29.50 inches. It continued its northwestward movement, reaching the south Texas coast on the morning of the 16th, and then turned northward into central Texas where it dissipated on the following day. The lowest pressure reported during the storm was 29.40 inches at Brownsville, Tex., on the morning of the 16th. No reports were received from the Gulf of Mexico during the passage of the storm, but high winds prevailed on the Texas coast on the 15th and 16th, and the foundering of the steamer Nicaragua occurred. The first advisory warnings regarding this storm were issued on the 11th. Warnings were first ordered on the night of the 13th from Apalachicola to Brownsville, not with the idea that high winds would actually occur on the coast but that vessels sailing southward would encounter them. On the 15th it became apparent that the storm was approaching the Texas coast and hurricane warnings were ordered west of Galveston. Considerable damage was done along the south Texas coast, and the highest wind velocities reported were 55 miles an hour at Brownsville, Tex., and 52 miles an hour at Corpus Christi, Tex.

Over the United States pressure averaged somewhat below normal during the first decade of the month and somewhat above during the week after, followed by moderate fluctuations during the last two weeks of the month. During the night of the 3d a disturbance developed over Nevada, the depression extending northeastward and joining forces with another disturbance over the Canadian Northwest. General rains and snows occurred west of the Rocky Mountains and in the Northwestern States; but there were none to the eastward as the extreme western disturbance after reaching Colorado on the 5th disappeared, while the northern center continued eastward practically dry and without high winds of consequence. The high area following the low lost its energy after reaching the Central Plains States, and the temperature fall was inconsequential. Conditions, however, continued unsettled over the West, and another moderate depression moved rapidly northeastward from Arizona to the Gulf of St. Lawrence between the 7th

and the 10th. High temperatures and general rains attended this low, although the rains were not of much consequence except in the Central West.

On the 9th another disturbance appeared over southern Utah. It moved to New Mexico and then turning northeastward moved with steadily increasing energy to Lake Superior and beyond by the 12th. This storm was attended by high temperatures and general rains that extended into the central valleys, the Lake region, and New England, and by gales on the Great Lakes, for which the necessary warnings were displayed. During this storm many vessels were driven to shelter and several were driven ashore. The most pronounced high area of the month followed this storm, but again the temperature fall was not of consequence except over portions of the extreme West.

General rain conditions were prevalent in the South Atlantic and Gulf States during the 13th and 14th as a result of the high area to the northward and the tropical storm that afterwards reached the Texas coast. The rains continued during the 15th in the South.

During the night of the 15th another low appeared on the extreme North Pacific coast, evidently an offshoot from the general Alaska low then prevailing. It moved eastward over the northern part of the country with increasing development, but without precipitation east of the Rocky Mountains, until it reached the upper Lakes, where it continued eastward by way of the St. Lawrence Valley attended by rains that extended southward until they joined the rains in progress over the Southern States under the influence of the remnants of the tropical disturbance previously described. Storm warnings were ordered on the Great Lakes on the 17th and 18th and moderately high winds followed. Moderately high pressure with lower temperatures followed the storm, and heavy to killing frosts occurred from the Lake region and the Ohio Valley eastward, following forecasts for the same issued on the 19th and 20th. Light frost occurred as far south as northern Virginia. Another disturbance appeared on the 18th on the North Pacific coast. It caused rains and severe gales on that coast and moved across the country, attended by general rains east of the Rocky Mountains, with a heavy fall on the 22d and 23d in New York and New England, but the storm itself did not develop to any great extent until it reached central New York on the morning of the 23d, by which time a high area had appeared over Nova Scotia, and storm warnings were ordered from Delaware Breakwater to Boston. The increased development of the high area to the northeastward effectually retarded the normal movement of the storm, and it lingered over New England, attended by persistent rains as far west as Lake Erie until the 26th, when it moved off to the northeastward, the high area having disappeared. The high pressure and cool weather following this storm extended through the South, causing light frosts over the interior districts on the 24th and 25th, for which warnings were issued on the 23d and 24th.

A depression appeared on the 25th over the extreme Central West. It was apparently a redevelopment from the general low that extended northward to Sitka, Alaska. The disturbance moved eastward and northeastward with increasing intensity and passed beyond Lake Superior on the 29th. Light rains accompanied this storm, and there were some high winds on the 29th over the Great Lakes, for which storm warnings were ordered on the 28th and 29th. It passed out the St. Lawrence Valley on the 30th, attended by light rains from the Lake region eastward.

Still another disturbance appeared over the extreme Southwest on the 29th. There was a high area to the northward and snows fell in the Rocky Mountain region. The storm moved eastward to Texas accompanied by rains, and reached the Ohio Valley at the end of the month, and northeast storm warnings were ordered on Lakes Erie, Huron, and Ontario. A marked high area followed the storm. It was central over Montana at the end of the month, but was not accompanied by any decided fall in temperature.

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since Jan. 1.	Average departures since Jan. 1.
New England	12	53.7	+3.2	— 8.8	—0.9
Middle Atlantic	15	57.9	+2.5	— 8.3	—0.8
South Atlantic	10	65.4	+1.8	+ 0.1	0.0
Florida Peninsula [1]	9	76.2	—2.9	+ 0.7	+0.1
East Gulf	11	67.9	+2.3	— 5.8	—0.6
est Gulf	11	68.8	+2.1	— 9.7	—1.0
Ohio Valley and Tennessee	14	59.0	+2.2	—16.3	—1.6
Lower Lakes	11	53.7	+1.9	—24.4	—2.4
Upper Lakes	13	50.2	+2.6	—24.4	—2.4
North Dakota [1]	9	43.9	+0.7	—15.5	—1.6
Upper Mississippi Valley	14	54.6	+1.8	—22.9	—2.3
Missouri Valley	12	55.0	+2.3	—14.2	—1.4
Northern slope	9	43.6	—1.0	—21.3	—2.1
Middle slope	6	56.4	+0.8	—20.4	—2.0
Southern slope [1]	7	62.0	+1.4	— 9.3	—0.9
Southern Plateau [1]	10	54.0	—3.0	—12.3	—1.2
Middle Plateau [1]	10	45.7	—2.9	—15.7	—1.6
Northern Plateau [1]	10	44.7	—3.3	—13.4	—1.3
North Pacific	7	49.4	—1.7	+ 6.5	+0.6
Middle Pacific	7	56.8	—1.9	— 3.4	—0.3
South Pacific	4	62.4	+0.2	+ 2.5	+0.2

[1] Regular Weather Bureau and selected cooperative stations.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
New England	11	2.15	61	—1.40	— 3.30
Middle Atlantic	15	1.70	53	—1.50	— 0.50
South Atlantic	11	2.27	57	—1.70	— 2.50
Florida Peninsula [1]	9	3.93	98	—0.10	+ 9.90
East Gulf	11	3.60	129	+0.80	+15.20
est Gulf	10	2.74	100	0.00	— 3.50
Ohio Valley and Tennessee	14	1.94	76	—0.60	+ 3.30
Lower Lakes	10	2.69	90	—0.30	+ 1.30
Upper Lakes	13	2.67	96	—0.10	— 0.40
North Dakota [1]	9	0.77	72	—0.30	+ 2.20
Upper Mississippi Valley	15	3.11	129	+0.70	— 1.30
Missouri Valley	12	2.56	79	—0.70	— 2.90
Northern slope	9	1.87	193	+0.90	+ 0.70
Middle slope	6	1.02	100	0.00	+ 0.80
Southern slope [1]	7	1.48	79	—0.40	+ 1.70
Southern Plateau [1]	9	1.25	191	+0.60	+ 0.40
Middle Plateau [1]	11	2.07	238	+1.20	+ 0.60
Northern Plateau [1]	10	1.87	147	+0.60	+ 3.00
North Pacific	7	3.80	95	—0.20	— 1.50
Middle Pacific	7	0.70	47	—0.80	— 3.40
South Pacific	4	0.36	47	—0.40	— 0.80

[1] Regular Weather Bureau and selected cooperative stations.

Average relative humidity and departure from the normal.

Districts.	Average.	Departure from normal.	Districts.	Average.	Departure from normal.
New England	75	—4	Missouri Valley	62	— 5
Middle Atlantic	75	—1	Northern slope	67	+ 7
South Atlantic	79	+1	Middle slope	62	+ 3
Florida Peninsula	81	+1	Southern slope	65	+ 2
East Gulf	80	+7	Southern Plateau	51	+ 9
West Gulf	70	—2	Middle Plateau	60	+11
Ohio Valley and Tennessee	73	+2	Northern Plateau	62	— 1
Lower Lakes	74	0	North Pacific	82	+ 2
Upper Lakes	78	0	Middle Pacific	64	— 6
North Dakota	71	—1	South Pacific	59	—11
Upper Mississippi Valley	72	+1			

Average cloudiness and departure from the normal.

Districts.	Average.	Departure from normal.	Districts.	Average.	Departure from normal.
New England	4.9	−0.5	Missouri Valley	3.3	−0.8
Middle Atlantic	4.3	−0.5	Northern slope	4.9	+0.5
South Atlantic	4.4	+0.4	Middle slope	3.3	−0.1
Florida Peninsula	4.9	+0.3	Southern slope	3.5	−1.1
East Gulf	5.0	+1.1	Southern Plateau	2.6	+0.4
West Gulf	4.2	+0.5	Middle Plateau	4.4	+1.1
Ohio Valley and Tennessee	4.1	−0.3	Northern Plateau	5.4	+0.8
Lower Lakes	5.2	−0.7	North Pacific	6.6	+0.3
Upper Lakes	4.8	−1.2	Middle Pacific	3.0	−0.8
North Dakota	4.9	−0.3	South Pacific	3.4	+0.3
Upper Mississippi Valley	3.7	−0.9			

Data, maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Block Island, R. I.	15	52	nw.	Corpus Christi, Tex.	16	51	n.
Buffalo, N. Y.	12	68	sw.	Denver, Colo.	4	55	s.
Do	14	50	sw.	Duluth, Minn.	18	50	sw.
Do	30	66	sw.	Eastport, Me.	25	60	ne.

Data, maximum wind velocities—Continued.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Flagstaff, Ariz.	27	54	sw.	North Head, Wash.	21	66	se.
Havre, Mont.	17	52	w.	Do	22	52	se.
Lander, Wyo.	4	54	sw.	Do	25	60	se.
Mount Weather, Va.	23	56	nw.	Pensacola, Fla.	18	50	s.
Do	24	65	nw.	Point Reyes Light, Cal.	1	74	nw.
Mount Tamalpais, Cal.	1	66	nw.	Do	3	75	nw.
Do	2	50	n.	Do	4	75	nw.
Do	4	65	nw.	Do	8	63	nw.
Do	5	57	n.	Do	18	58	nw.
Do	7	50	nw.	Do	19	57	nw.
Do	18	56	nw.	Do	20	56	nw.
Do	19	58	nw.	St. Paul, Minn.	18	51	w.
Do	25	58	sw.	Do	29	55	w.
Do	29	52	nw.	Southeast Farallon, Cal.	4	56	nw.
New York, N. Y.	15	61	nw.	Tatoosh Island, Wash.	1	50	sw.
Do	23	52	sw.	Do	16	64	sw.
North Head, Wash.	06	54	s.	Do	18	50	ne.
Do	18	81	s.				
Do	19	70	w.				